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09/982,534	10/18/2001	Enrique Gutierrez JR.	3192 P 007	7757

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EXAMINER

DEBERADINIS, ROBERT L

ART UNIT

PAPER NUMBER

2836

DATE MAILED: 11/18/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/982,534

Applicant(s)

GUTIERREZ ET AL.

Examiner

Robert DeBeradinis

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on 18 June 2003.

2a) ☐ This action is FINAL.

2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) 1-40 is/are pending in the application.

4a) Of the above claim(s) 28-40 is/are withdrawn from consideration.

5) ☒ Claim(s) 20-27 is/are allowed.

6) ☐ Claim(s) 1-19 is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) ☐ All b) ☐ Some * c) ☐ None of:

1. ☐ Certified copies of the priority documents have been received.

2. ☐ Certified copies of the priority documents have been received in Application No. _____.

3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

13) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

a) ☐ The translation of the foreign language provisional application has been received.

14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4.

4) ☐ Interview Summary (PTO-413) Paper No(s). _____

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other:

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DETAILED ACTION

Election/Restrictions

Applicant elected without traverse claims 1-27 in Paper # 5 (interview summary of 18 June 2003).

Claims 28-40 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in Paper No. 5.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-3, 6, 8, 9, 18 are rejected under 35 U.S.C. 102(b) as being anticipated by REDL 6,229,292.

Regarding claims 1, 6.

REDL discloses a power stage (68) having an input (Vin) and an output, the input for receiving a power signal, the output being operably connected to the object (RL); a sensor (64) being operably connected to the output; a controller being operably connected to the output and responsive to the sensor (figure 8); and a modulator being operably connected between the controller and the power stage wherein the power

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stage outputs the electrical signal to the object in response to modulator (66) and the controller (see column 10, lines 50-65).

Regarding claim 2.

REDL discloses the power delivery device of claim 1 wherein the electrical signal includes an AC ripple component and a DC component (see figure 10b).

Regarding claims 3, 18.

REDL discloses the power delivery device of claim 1 wherein the electrical signal includes a dynamic power, the dynamic power being operably responsive to the specific features of the object (for example the power supplied to the object is responsive to the object current).

Regarding claims 8, 9.

REDL teaches a current sensor (106) and a voltage sensor (110). See figure 12.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 4, 5, 7, 10, 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over REDL 6,229,292 in view of KLUGHART 6,396,137.

Regarding claim 4.

REDL discloses the power delivery device of claim 1.

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REDL does not disclose a user interface being operably connected to the controller.

KLUGHART discloses a user interface (figure 39, user interface 3905).

It would have been obvious to one having ordinary skill in the art at the time of this invention to modify the voltage regulator as taught by REDL to include a user interface. The motivation for the user interface would be to provide a means to change the control parameters of the voltage regulator circuit to provide a control to the user to adjust the output voltage.

Regarding claim 5.

REDL discloses the power delivery device of claim1.

REDL does not disclose wherein the controller is a digital signal processor having an A/D converter and a D/A converter.

KLUGHART discloses a microprocessor (figure 40, processor 4004) controlling power regulator (4006) and an A/D converter converting analog signals from wheel assemble to digital signals to interface with the microprocessor supervisor (controller).

It would have been obvious to one having ordinary skill in the art at the time of this invention to modify the teachings of REDL to provide a digital signal processor for the controller and provide the proper A/D and D/A converts for the required interface for the digital processor to work with the existing analog signals. The motivation to have a digital signal processor as a controller would be to provide a controller that would provide more control flexibility for the user through the user interface.

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Regarding claims 7, 10, 11.

REDL discloses the power delivery device of claim 1.

REDL does not disclose a frequency modulator, a power sensor, and wherein the electrical signal output by the power stage includes a constant power.

KLUGHART teaches a frequency modulator (column 37, lines 30-33) and wherein the electrical signal output by the power stage includes a constant power (column 1, line 58).

It would have been obvious to one having ordinary skill in the art at the time of this invention to modify the teaching of REDL to sense the power output of the power delivery device and to provide a constant power to the object. The motivation to provide the constant power to the object would be to transfer the maximum amount of energy to the object without overstressing the object.

Claims 12-17, 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over REDL 6,229,292 in view of KLUGHART 6,396,137 in further view of WASHINGTON 4,009,091.

Regarding claims 12-17.

REDL in view of KLUGHART disclose a microprocessor controlled power delivery device including a user interface wherein a user may control the device to output the desired power levels the user desires.

REDL in view of KLUGHART do not disclose a power signal output to have a power gradient waveform, a voltage gradient waveform, a current gradient waveform or any of the other waveforms claimed.

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Washington discloses pulsing techniques were more efficient for electroplating (column 1, lines 29) and goes on to disclose other power deliver waveforms.

It would have been obvious to one having ordinary skill in the art at the time of this invention to program the power delivery device, disclosed by REDL in view of KLUGHART, through the user interface any type of power delivery waveform desired to provide the desired plating on an object.

Regarding claim 19.

REDL in view of KLUGHART disclose a microprocessor controlled power delivery device responsive to current supplied from said power deliver device.

REDL in view of KLUGHART do not disclose wherein the electrical signal output from the power delivery device is further being operably responsive to a process condition.

WASHINGTON discloses current sensor is used as feedback signal for maintaining the peak current desired through the electroplating electrodes (column 3, lines 24-28).

It would have been obvious to one having ordinary skill in the art at the time of this invention to sense the current which was responsive to a process condition. The motivation would be to control the peak current desired through the electroplating electrodes of a Pulse Plater.

Allowable Subject Matter

Claims 20-27 allowed.

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The following is a statement of reasons for the indication of allowable subject matter: the prior art does not disclose or suggest to disclose a tracking stage wherein dynamic power dissipated by the output stage is minimized.

Any inquiry concerning this communication should be directed to Robert L. DeBeradinis whose number is (703) 306- 5857. The Examiner can normally be reached Monday-Friday from 8:30 am to 5:00 pm.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Brian Sircus, can be reached on (703) 308-31190. The Fax phone number for this Group is (703) 308-7722.

RLD

NOVEMBER 6, 2003

